Day 2 Session 1 breakout 1: What needs to be fixed and added (near term): for group 1

1. What problems have been encountered for the analysis?
    Precipitation – radar miss-alignment (Eric coverage is okay but maximum is off)
    QC issues: bad data goes into the analysis (we recommended to adjust QC threshold value checks); Users are interested in the new QC procedure of LAPS;
    Problems with SODAR(?) data.

2. Is the analysis well balanced?
    WRF initialization issues, particularly 0-15 min forecast has some balance problems.
    Isobaric analysis may cause some imbalance.

3. Have you compared LAPS analysis against any other data assimilation systems (3-4DVAR, enkf)?
    Some comparison with 3DVAR and it appeared LAPS is better for the 2009 winter cases;
4. Any issues related to the hotstart?
    Consider humidity to cloud relationship: generate cloud for high humidity areas.
    Use satellite hydrometer for humidity;
    Low cloud: snow and cloud distinction.

5. Is the cloud analysis satisfactory?
    Some layer problems (Eric solved it)

6. Are there any observation dataset that should be considered to add to our analysis?
    Precipitation observation for correction of LAPS radar analysis;
    Dual pol radar data
    Tower data (LAPS already has it);
    Lidar data

7. Have you had issues of radar and satellite data assimilation?
    Eric developed a surface ice 3.9 micron relationship that we might want to look at.
    Better documentation on LAPS LVD file satellite data format.